

ALPASENA-MARCINIAKOWSKA, Halina

Transaminases and keto acids in liver cirrhosis. Pol. arch.
med. wewnet. 35 no.9:1315-1318 '65.

I. Z II Kliniki Chorob Wewnętrznych AM w Łodzi (Kierownik:
doc. dr. med. J.R. Chojnowski).

ADAMSHVILI, N.G.

Color as a factor in the illusion of fixated set. ~~Exp. isel.~~ po
psikhol. ust. 1:303-309 '58. (MIRA 13:12)
(Attitude (Psychology)) (Hallucinations and illusions)
(Color—Psychology)

PSZONA, Stanislaw; ADAMSKA, Bozena; ZARNOWIECKI, Krzysztof

Whole-body counter for internal contamination control.
Nukleonika 8 no.8:565-572 '63.

1. Institute of Nuclear Research, Health Physics Department,
Warsaw.

*

ADAMSKA, Danuta; ROMER, Tomasz

A case of achondroplasia. Czas. stomat. 18 no.5:583-587 My'65.

1. Z Katedry Endokrynologii Akademii Medycznej w Łodzi (Kierownik: prof. dr. T. Pawlikowski) i z Katedry Ortodontji Akademii Medycznej w Łodzi (Kierownik: doc. dr. H. Kondrat-Wedzicka).

ADAMSKA, Janina

On the value of pseudoisochromatic tables. Klin. oczna 33
no.1:77-84 '63.

(COLOR PERCEPTION TESTS)
(AUTOMOBILE DRIVER EXAMINATION)
(RAILROADS)

ADAMSKA, K.

The Gostyn glass plant continues to grow beautiful and excellent. Przemysl Materialow Budowlanych 9 no.19:1,2
My '62.

ADAMSKA, Krystyna

Reminiscences of an old member of the Communist Party of Poland.
An interview with Teofil Milewicz. Przemysł budowy 9 no. 17:3 30
Ap '62.

ADAMSKA, Krystyna

A call for help from the Zawiercie Asbestos Tile Works in
Ogrodzieniec. Przem mat bud 9 no.26:2 25 Je '62.

ADAMSKA, Krystyna

Before they start to conquer the glass industry; on the role
of the graduates of the Glass Technological College in Wolomin.
Przem mat bud 9 no.29/30:1, 2 22 J1 '62.

ADAMOWSKA-FURTAK, Krystyna

An unusual case of rupture of the cornea following forceps delivery.
Polski tygod. lek. 14 no.30:1404-1405 27 July 59.

1. (Z Kliniki Chorob Oczu Pomorskiej Akademii Medycznej im. Gen.
K Swierczewskiego w Szczecinie; kierownik: prof. dr med. W. Starkiewicz)
(BIRTH INJURY) (CORNEA, wds & inj.)

POLAND

ADAMSKA-MARCINKOWSKA, Halina, Internal Division (Oddzial Wewnetrzny) of the Hospital (Szpital) im. K. Jonschera in Lodz (Director: Docent, Dr. med. J. CHOJNOWSKI)

"Comparative Studies of the Diuretic Effect of Diurazine and Other Commonly Used Diuretics."

Warsaw, Polski Tygodnik Lekarski, Vol 18, No 2, 7 Jan 63, pp 54-56.

Abstract: [Author's English summary modified] The diuretic effect of average doses of diurazine were compared with those of salyrgan, theophylline, chlorthiazide, and diureamide. Treatment with diurazine and salyrgan together was found to be additive, with theophylline or chlorthiazide--additive to some extent, and non-additive with diureamide. There are 6 references, of which 2 are Polish, one English, and 3 German.

1/1

POLAND

CHOJNOWSKI, Jozef Ryszard and ADAMSKA-MARCINKOWSKA, Halina,
Division "B" of Internal Diseases (Oddzial Chorob Wewnetrz-
nych "B") of the Hospital (Szpital) im. K. Jonschera in Lodz
(Ordynator: Docent, Dr. med. J. R. CHOJNOWSKI)

"Clinical Observations on the Anticoagulative Effect of
Fenhydren."

Warsaw, Polski Tygodnik Lekarski, Vol 18, No 21, 20 May 63,
pp 744-747

Abstract: [Authors' English summary modified] A chronic dose
of 150 mg daily of Polish anticoagulant Fenhydren (1,3 di-
phenylindandion) administered to patients with myocardial in-
farction reduced prothrombin to the therapeutic level in most
of them after second or third day, with normal level return-
ing on the third day after administration ceased. Fenhydren
reaction was stable, general condition of patients improved,
no side effects were noted, and fluctuation of prothrombin
level was smaller than with Pelentan. All eight (8) refer-
ences are to English-language sources.

1/1

ZAKRZEWSKA, A.; ADAMSKA-PIETKIEWICZ, K.

~~Experimental investigations on the influence of some antibiotics on~~
Experimental investigations on the influence of some antibiotics on
the schleroma bacillus. Bull. Soc. amis. sc. Poznan; Ser. C. no.3:61-
69 1952. (CINL 23:4)

1. Of the Otolaryngological Clinic of Poznan Medical Academy and of the
State Institute of Hygiene, Poznan.

BEN', I.I.; ADAMSKAYA, G.S.

Reducing capital investments and lowering transportation and
operation costs in the glass industry. Stek. 1 ker. 17 no.6:9-13
Ja '60. (MIRA 13:6)

(Glass manufacture)

ADAMSKAYA, I.A. (Moskva)

Writing a kinetic equation in spherical harmonics (curvilinear
coordinates - axisymmetric case). Zhur. vych. mat. i mat. fiz.
3 no.5:927-941 S-0 '63. (MIRA 16:11)

S/0208/64/004/003/0473/0484

ACCESSION NR: AP4037252

AUTHORS: Adamskaya, I. A. (Moscow); Godunov, S. K. (Moscow)

TITLE: Method of spherical harmonics in the problem of critical parameters

SOURCE: Zhurnal vyshislitel'noy matematiki i matematicheskoy fiziki, v. 4, no. 3, 1964, 473-484

TOPIC TAGS: spherical harmonics; critical parameter, spherical reactor, multigroup approximation, reactor dimension

ABSTRACT: The authors study the problem of determining critical parameters of spherical reactors in a multi-group approximation by the method of spherical harmonics. The problem for $2n$ harmonics and m groups is reduced to a system of $2mn$ differential equations for $2mn$ unknown functions y_{ij} , $i = 0, 1, \dots, (2n-1)$, $j = 1, 2, \dots, m$. The index i denotes the number of the harmonic, and j - the number of the group. The system of differential equations has the form

$$a_i \frac{dy_{i+1,j}}{dr} + b_i \frac{dy_{i-1,j}}{dr} + \frac{1}{r} (\gamma y_{i+1,j} + \delta y_{i-1,j}) + \frac{\lambda}{v_j} y_{ij} = \rho \sum_{k=1}^m a_{ik}^* y_{ik} \quad (1)$$

$$i = 0, 1, \dots, (2n-1); j = 1, 2, \dots, m.$$

Cord 1/3

ACCESSION NR: AP4037252

Here

$$a_i = \frac{i+1}{2i+1}, \quad b_i = \frac{i}{2i+1}, \quad \gamma_i = \frac{(i+1)(i+2)}{2i+1}, \quad \delta_i = -\frac{i(i-1)}{2i+1}, \quad (2)$$

v_j is the velocity of neutrons of the j -th group, λ is a parameter (time constant of the system) and ρ is density. Computing the variable y_{ij} as the components of the vector y in 2m dimensional space, the system can be rewritten as

$$P \frac{dy}{dr} + \frac{1}{r} Qy + \lambda Vy = \rho Dy, \quad (3)$$

where P , Q , V , and D are matrices. The problem of finding critical parameters can be handled in the following manner. Considering strictly given reactor dimensions, find the least value of the parameter λ for which (3) has a nontrivial solution satisfying the given boundary conditions, or determine the least value of the parameter β , with $\lambda = 0$, for which system (3) has a nontrivial solution in the region $[0, \beta R]$, satisfying the given boundary conditions (problem of critical reactor dimensions), etc. The method proposed by the authors for solving this problem is a trial method. Given successively the values of the parameter being determined (β or λ), one solves system (3) and each time computes some variable Δ - "residual" which, roughly speaking, shows how much one boundary condition is not satisfied when the other is satisfied. Trials are made until, for the chosen

Card 2/3

ACCESSION NR: AP4037252

value of the parameter, the residual is practically equal to zero. "A great deal of the work in setting up the programs (without which this paper could not have been written) was done by I. P. Sharova." Orig. art. has: 12 formulas.

ASSOCIATION: none

SUBMITTED: 13May63

. DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: MA

NO REF SOV: 005

OTHER: 000

Card 3/3

ADAMSKAYA, I.A.; GODUNOV, S.K. (Moskva)

Method of spherical harmonics in the problem of critical parameters.
Zhur. vych. mat. i mat. fiz. 4 no.3:473-484 My-Je '64.
(MIRA 17:6)

ADAMSKAYA, K. B.

USSR/Medicine - Vitamin B₁ =
Medicine - Pregnancy

Feb 49

"Vitamin B₁ Content in Pregnancy Complicated With
Toxicosis," K. B. Adamskaya, Chair of Obstetrics
and Gynecol, Moscow Med Inst, Min of Pub Health
USSR, 2 pp

"Akusher i Ginekol" No 2

Includes chart showing the relative Vitamin B₁ con-
tent in ~~non~~pregnancy, normal pregnancy, and preg-
nancy complicated by toxicosis, showing the expedi-
ency of using this vitamin in treating the latter
cases. Dir, Chair of Obstetrics and Gynecol: Prof
I. L. Braude, Hon Sci.

63/49T38

S/123/61/000/015/028/032
A004/A101

AUTHORS: Gel'ts, V. E., Adamskaya, R. T.

TITLE: New core binders without oil

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 15, 1961, 14, abstract
15092 ("Tr. N.-1. in-ta mestn. i topliv. prom-sti", 1959, no. 14,
54-60)

TEXT: The authors describe some types of synthetic binders. The binder on the base of polydiene of the Yefremovo Plant with an addition of 7% of 25% manganese naphthanate solution ensured a mixture strength during tensile tests of 7-8 kg/cm² (drying for 1.5 hours at 200°C, binder quantity - 3%). The emulsion binder on the base of coumarone resin had a tensile strength of 7.2 kg/cm² when the specimens were dried for 1.5 hours at 200°C. The outer emulsion medium was a colloidal aqueous suspension of bentonite clay of the Pyzhevsk deposits. The binder on the base of dehydrated kerosene oxidation products ensure a mixture of the following technological indices: $\bar{\sigma}_{acc}$ in the green state 0.08 - 0.1 kg/cm², $\bar{\sigma}_p$ of the dry specimens - 12-14 kg/cm², gas permeability of the green specimens - 320-340 units. The mentioned properties were obtained for mixtures of the

Card 1/2

New core binders without oil

S/123/61/000/015/028/032
A004/A101

following composition (in parts by weight): K70/100 sand - 100; binder - 3; bentonite - 5; water - 0.75. All the developed binders ensure an easy shaking-out of the cores from the castings. There are 9 references.

S. Zhukovskiy

[Abstracter's note: Complete translation]

Card 2/2

ADAMSKI, A.

We export paper products and school and office articles. p . 195.

PRZEMYSŁ DRZEWNY. Centralne Zarządy Przemysłów: Drzewnego, Meblarskiego, i Lesnego i Stowarzyszenie Inżynierów i Techników Leśnictwa i Drzewnictwa. Warszawa, Poland. Vol. 9, no. 6, June 1958.

Monthly List of East European Accession (EEAI), LC, Vols. 8, No. 9, September, 1959.

Uncl.

STEFAN, Zbigniew; ADAMSKI, Alojzy

Use of the curve of the carotid artery pulse in the evaluation of
a phonocardiogram. Polski tygod. lek. 13 no.3;81-85 20 Jan 58.

1. Z I Kliniki Chorob Wewnętrznych Akademii Medycznej w Poznaniu.
kierownik: prof. dr Stefan Kwasniewski. Adres: Poznan, ul. Długa 1/2,
I Klin. Chor. Wewn. AM.

(CARDIAC MURMURS AND SOUNDS

phonocardiography, carotid artery pulse curve as
standard (Pol))

(ARTERIES, CAROTID, physiol.

pulse curve as standard for phonocardiography (Pol))

Internal Medicine June 59

2609. THE CLINICAL ASPECT OF SYPHILIS OF THE LIVER AND SPLEEN -
Przyczynę do kliniki kily watroby i śledziony - Adamski A. and
Witoszyński S. Klin. Chor. Wewn. A.M., Poznań - POL. TYG. LEK.
1958, 13/13 (484-487) Tables 1

Three cases of syphilis of the internal organs (liver and spleen) of an insidious course are described. By a specific treatment, disappearance of inflammatory symptoms, of portal hypertension symptoms and of hypersplenism was obtained. Normalization of the electrophoretic values of the serum proteins was an important criterion of the improvement.

(VI, 50)

WITOSZYNSKI, Slawomir; ADAMSKI, Alojzy

Diagnostic difficulties in malignant lymphogranulomatoma. Polski tygod.
lek. 13 no.41:1587-1589 13 Oct 58.

1. (Z I Kliniki Chorob Wewnętrznych A. M. w Poznaniu; kierownik: prof. dr
Stefan Kwasniewski). Adres: Poznan, ul. Długa 1/3, I Klin. Chor. Wewn.
A.M.

(HODGKIN'S DISEASE, diag.
difficulties (Pol))

JASINSKI, Kazimierz; ADAMSKI, Alojzy, NEJMAN, Krystyna.

Evaluation of peripheral vascular function based on photoplethysmographic tests. Polskie arch. med. wewn. 28 no.5:733-737 1958.

1. Z I Kliniki Chorob Wewnętrznych A.M. w Poznaniu Kierowniki:
prof. dr med. S. Kwasniewski. Adres autora: Poznan, ul. Długa 1/2
I Klinika Chorob Wewnętrznych A.M.

(PLETHYSMOGRAPHY,

photoplethysmography in normal cond., rheum. arthritis
& peripheral vasc. dis. (Pol))

(ARTHRITIS, RHEUMATOID, physiology

photoplethysmography (Pol))

(VASCULAR DISEASES, PERIPHERAL, physiology,
same (Pol))

BERNARDCZYKOWA, Anna: CELLARY, Jerzy; ADAMSKI, Alojzy

Usefulness of electrophoretic examination of blood serum proteins
in rheumat. iritis. Klin.oczna 30 no.2:157-161 '60.

1. Z Kliniki Chorob Oczu A.M. w Poznaniu. Kierownik: prof.dr med.
A. Kwaskowski. Z I Kliniki Chorob Wewnetrznych A.M. w Poznaniu.
Kierownik: prof.dr med. S. Kwasniewski.
(ARTHRITIS RHEUMATOID compl.)
(IRITIS etiol.)
(BLOOD PROTEINS)

ADAMSKI, Alojzy

Treatment of ventricular tachycardia, Polski tygod.lek. 16 no.4:
130-134 23 Ja '61.

1. Z I Kliniki Chorob Wewnętrznych A.M. w Poznaniu: kierownik:
prof. dr Stefan Kwasniewski.
(TACHYCARDIA PAROXYSMAL ther)

ADAMSKI, Alojzy; GUTOWSKI, Jerzy; WITOSZYNSKI, Slawomir

Activity of glutamic-pyruvic transaminase (GPT) in the blood serum
in rheumatic diseases. Polski tygod. lek. 16 no.32:1224-1228 7 Ag '61.

1. Z I Kliniki Chorob Wewnetrznych A.M. w Poznaniu; kierownik: prof.
dr Stefan Kwasniewski i z Zakladu Chemii Fizjologicznej A.M. w Poznaniu;
kierownik: prof. dr Zdzislaw Stolzmann.

(RHEUMATISM blood) (TRANSAMINASES blood)

ADAMSKI, Alojzy

Recurrent anuria during the course of chronic glomerulonephritis.
Pol. tyg. lek. 17 no.11:402-403 12 Mr '62.

1. Z I Kliniki Chorob Wewnętrznych AM w Poznaniu; kierownik: prof. dr
Stefan Kwasniewski.

(GLOMERULONEPHRITIS compl) (ANURIA etiol)

NOWAK, Stefan; ADAMSKI, Alojzy; WITOSZYNSKI, Slawomir; GUTOWSKI, Jerzy

Effect of acute ethyl alcohol intoxication on the activity of glutamic-pyruvic transaminase (SGPT) in the blood serum. Pol. arch. med. wewnet. 32 no.1:69-73 '62.

1. Z I Kliniki Chorob Wewnetrznych AM w Poznaniu Kierownik: prof. dr med. S. Kwasniewski i z Zakladu Chemii Fizjologicznej AM w Poznaniu Kierownik: prof. dr med. Z. Stolzmann.

(TRANSAMINASES blood)

(ALCOHOLIC INTOXICATION blood)

ADAMSKI, Alojzy

Liver function tests in chronic progressive rheumatism. Poznan.
tow. przyjac. nauk wydz. lek. 26:5-32 '63.

(ARTHRITIS, RHEUMATOID) (LIVER FUNCTION TESTS)

GRALA, Ryszard; ADAMSKI, Alojzy; KRETSCHMER, Ryszard

Therapeutic effects of hepason in liver cirrhosis. Pol. tyg.
lek. 20 no.14:523-525 5 Ap '65.

1. Z I Kliniki Chorob Wewnętrznych AM w Poznaniu (Kierownik:
doc. dr. K. Jasinski).

ADAMSKI, Alojzy; WITOSZYNSKI, Slawomir

Liver function after partial gastrectomy. Pol. tyg. lek.
20 no.40:1502-1504 4 0 '65.

1. Z I Kliniki Chorob Wewnetrznych AM w Poznaniu (Kierownik:
doc. dr. K. Jasinski).

ADAMSKI, Bozydar; NOWODWORSKI, Jan

Production of piston rings for Ganz type combustion motors. Przegl
kolej mechan 14 no.10:301-305 0 '62.

1. Zakłady Naprawcze Taboru Kolejowego, Poznan.

GNILKA, Tadeusz; TWARDOSZ, Wladyslaw; ADAMSKI, Cyryl

Results of immediate and remote surgery of urological lesions following gynecological operations. Pol. tyg. lek. 18 no.32: 1194-1196 5 Ag '63.

1. Z II Kliniki Położnictwa i Chorob Kobiety AM w Poznaniu; kierownik: doc. dr E. Howorka i z I Kliniki Chirurgicznej AM w Poznaniu; kierownik: prof. dr St. Nowicki.

(HYSTERECTOMY) (BLADDER DISEASES) (URETER)
(WOUNDS AND INJURIES) (VESICOVAGINAL FISTULA)
(POSTOPERATIVE COMPLICATIONS) (IATROGENIC DISEASE)

GNILKA, Tadeusz; TWARDOSZ, Wladyslaw; ADAMSKI, Cyryl

Results of Kelly's operation in urinary incontinence in women.
Ginek. pol. 34 no.4:502-506 '63.

1. Z II Kliniki Poloznictwa i Chorob Koscnych AM w Poznaniu
Kierownik: prof. dr med. E. Howorka i z I Kliniki Chirurgicznej
AM w Poznaniu Kierownik: prof. dr med. J. Nowicki.
(URINARY INCONTINENCE)
(SURGERY, OPERATIVE
(GYNECOLOGY)

ADAMSKI, Czeslaw

POLON

18989* Brasses With Low
Copper Content. (Polish.) Czeslaw
Adamski. Przegląd Odlewnictwa,
v. 4, no. 5, May 1954, p. 123.
Effect of Fe, Mn, Si, and other
properties and corrosion resis-
tance; applications. Micrographs,
tables, photographs, graphs.
2 rel.

Copper Content. Mośladac nieko-
Adamski. Przegląd Odlewnictwa,
v. 4, no. 5, June 1954, p. 157-162.
alloying elements on mechanical
tance; applications. Micrographs,
2 rel.

7
2

Distr: 4E2c/4E2b(w)

5480
* Adamski C., Górski A., Kobyliński S. 621.746.7:669.3/7
Non-Ferrous Metal Castings Classification of Faults in

„Systematyka wad odlewów metali nieżelaznych”. Warszawa, 1956,
PWT, 16°, 121 pp., figs.

A classification of faults in non-ferrous metal castings; description
of faults; classification of causes leading to appearance of faults; com-
parison of possible causes leading to appearance of particular kinds and
varieties of faults; and an atlas of faults in non-ferrous metal castings
made in sand, gravitation metal and pressure moulds. The work includes
information concerning technical points to be observed when receiving
castings.

22 KM

5634 669.715.782 : 539.567
Krupkowski A., Adamski C. On the Problem of the Plasticity of
Silumin. 26

„Zagadnienie plastyczności siluminu”. Przegląd Odlewnictwa. No. 12,
1957, pp. 341—347, 23 figs.

Several attempts to improve the technology of casting silumin containing approximately 11% Si, were made with a view to obtaining the maximum value of elongation in the tensile test. It was noted that the pouring temperature, the refining with nitrogen and the modification with metallic sodium have considerable influence. After 15 minutes of refining, the increase in the elongation value amounted to 50% of the value before refining. Silumin was modified by adding the following weight percentages of sodium in relation to the metal charge: 0.05, 0.1, 0.15, 0.2, 0.25, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.5, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0, 45.0, 50.0, 55.0, 60.0, 65.0, 70.0, 75.0, 80.0, 85.0, 90.0, 95.0, 100.0.

P/038/60/005/001/001/002
A076/A126

AUTHOR: Adamski, Czesław

TITLE: Low-copper brass. Problems of the γ phase

PERIODICAL: Archiwum Hutnictwa, v. 5, no. 1, 1960, 3 - 60

TEXT: The increasing shortage of copper in the World and in Poland is a great problem for the Polish economy, since copper ore mined in Lower Silesia is relatively poor containing only 0.5 to 1% of copper. The Polish industry produces less copper than required. As most of the copper is needed in production of bronze and brass products. The author lists and describes general properties of copper-zinc products, special-brass, low-copper brass, industrial low-copper brass, production technology of castings and rods, M49 brass sheets, and describes the problem of γ phase in low-copper brass. By low-copper brass the author means copper alloys with zinc and other special additions in which the copper content is usually lower than 50%. The chemical compositions of these alloys are within the following limits:

Cu = 40 - 50%
Mn = 0 - 4.5%
Fe = 0 - 3.5%

Ni = 0 - 5.0%
Al = 0 - 0.5%
Si = 0 - 0.5%

Card 1/3

Low-copper brass. Problems of the γ phase

P038/60/005/001/001/002
A076/A126

Pb = 0 - 7.0%

Zn = 40 - 50%

The chemical analysis related to the equilibrium system of copper-zinc and the so-called coefficients of the structure changes prove that the alloy ought to reveal β' and γ phases in its structure. For the presence of the γ phase the low-copper brass ought to be brittle and hard materials being of no technical use. Actually, they are alloys of the β' structure and the mechanical properties of cast specimens of the low copper brass are within the range of:

Rr = 40 - 50 kg/mm²

U = 2 - 3 kgm/cm²

a_4 = 10 - 20%

H_B = 110 - 140 kg/mm²

It was possible to obtain the structure in brass of a relatively very low copper content owing to the A. Krupkowski and C. Adamski rule, which relates the structure of brass to the ratio of copper content to zinc. The author's investigations proved that the casting of small parts in metal forms, e.g., household taps, causes the appearance of γ phase. Further observations showed that if specimens of the same alloy were cast simultaneously in sand and metal forms, in those cast in metal forms separation of the γ phase was seen. In order to confirm the assumption that the separations of the γ phase might be caused by segregation, the specimens of low-copper brass in which the presence of the γ phase was found, were annealed for

Card 2/3

Low-copper brass. Problems of the γ phase

P/038/60/005/001/001/002
A076/A126

2 - 12 hours at 300 to 800°C. These tests revealed the γ phase separations disappear after annealing. The influence of the γ phase separations upon strength, impact, anti-friction properties and corrosion was investigated. The results revealed that the appearing separations of the γ phase in low-copper brass of the ratio Cu:Zn > 1 do not cause great changes in the properties of these alloys. In conclusion the author states that: - 1) the γ phase range does not appear in the equilibrium system corresponding to low-copper brass in which the ratio of Cu:Zn > 1 . The appearance of some separations of the γ phase in these alloys is caused by the segregation of the alloying components. A proof of this is the disappearance of these separations after annealing. 2) Small separations of the γ phase do not disqualify the alloys causing a relatively small decrease of their properties; the decrease is proportional to the γ phase content in the brass. There are 26 photographs, 21 tables, 25 figures and 56 references: 27 Soviet-bloc and 29 non-Soviet-bloc. The reference to the most recent English-language publication reads: Smithells C.J., Metals Reference Book, London 1955.

ASSOCIATION: Katedra Odlewnictwa Akademii Górniczo-Hutniczej, Kraków (Foundry
Department of the Mining and Metallurgy Academy, Kraków)

SUBMITTED: July 1, 1959.

Card 3/3

ADAMSKI, Czeslaw; ZIMNIELSKI, Adam

Influence of technological parameters on the structure and properties of silumin. Metal i odlew 38 no.8:23-42. '61.

1. Katedra Odlewnictwa Akademii Gorniczo-Hutniczej, Zaklad Odlewnictwa metali Niezelaznych.

P/503/61/000/037/001/003
D300/D307

AUTHOR: Adamski, Czesław

TITLE: New alloys of zinc

SOURCE: Kraków. Akademia Górniczo-Hutnicza. Zeszyty naukowe.
no. 37, 1961. Metalurgia i odlewnictwo. no. 7, 35-57, 1961

TEXT: The present article is a continuation of a series of studies carried out jointly with Professor Doctor A. Krupkowski on possible alternatives to the use of Cu and Sn, and was aimed at determining the composition of a Zn alloy suitable for heavy duty, which could replace some alloys of copper. Zn-Al (I) and Zn-Al-Cu (II) systems were studied. In system I, in which Al was varied from 4%-50% in steps of 2%, the effect of Al was studied on the hardness, tensile strength, and elongation, in alloys cast in sand and in metallic molds. Structures and wear properties were also investigated (the latter for 5-30% Al). The most promising results were obtained for Al contents of 14-18%. In system II, Al was maintained at 14-16% (IIa) or 16-18% (IIb) and Cu was varied from 0 to 5% in

Card 1/2

New alloys of zinc

P/501/61/000/037/001/003
D300/D307

steps of 1% in each series of tests. No essential difference between IIa and IIb alloys was observed. The tests were similar to those for system I. The preferred percentage composition was found to be: Al 14-16; Cu 3-4; Mg 0.02-0.05; Fe up to 0.05; (Pb + Cd + Sn) up to 0.008; Zn rest. The minimum tensile strength was 30 kg mm⁻², elongation 4%, and hardness 80 kg mm⁻². Industrial tests confirmed the usefulness of this alloy for machine parts under conditions where the temperature $\leq 100^{\circ}\text{C}$, at $p_v = \leq 80 \text{ kg mm}^2\text{msec}^{-1}$, v_{max} being 5 msec⁻¹. The alloy allows a saving of 500 kg Cu per ton of casting, and its casting characteristics are good. Care must however be taken with the preparation of liquid metal, purity of the initial charge, and the temperature regime. There are 17 figures and 2 tables.

ASSOCIATION: Katedra Odlewnictwa, Zakład Odlewnictwa Metali
Niezelaznych (Department of Casting, Non-Ferrous
Metals Casting Institute)

Card 2/2

ADAMSKI, Czeslaw

Low-copper-content brasses; problem of the γ phase. Metal i
odlew no.10:113-115 '63.

1. Wydział Odlewnictwa, Akademia Gorniczo-Hutnicza, Krakow.

KRUPKOWSKI, Aleksander, prof. dr inż.; ADAMSKI, Czesław, doc. dr inż.

M-54 antifriction brass. Rudy i metale 8 no.7:236-240 Je '63.

ADAMSKI, Czeslaw, doc. dr inz.; ZIMNIELSKI, Adam, mgr inz.

New antifriction zinc alloys. Przegl odlew 13 no.4:105-111
Ap '63.

ADAMSKI, Czesław, doc. dr inż.; ZIOLKOWSKI, Stanisław, inż.; ZEP
Ireneusz, mgr inż.

Influence of the melting technology on the mechanical
properties and structure of special Cu₅₄Mn₄Fe₁₁Sn₁₁Zn bronze.
Przegl odlew 13 no. 12:328-332 D '63.

GOLEC, Roman; ADAMSKI, Czeslaw; KULIG, Zygmunt

The AlZn5Mg1FeCr aluminum alloy for household and sanitation fittings. Przegl odlew 14 no.12:334-338 D '64.

ADAMSKI, Czeslaw

Dendritic segregation of solutions; the problem of the influence of the cooling rate. Archiw hut 6 no.3:231-262 '61.

ADAMSKI, EDWARD

Adamski, Edward. Technika pilotazu szybowcowego. [Wyd. 1. Warszawa] Wydawn.
Ligi Przyjaciol Zolnierza [1953] 227 p. (Biblioteczka lotnicza [Technique of
glider piloting. illus., diags.]

SO: Monthly List of East European Accessions, L. C., Vol. 3, No. 5, May 1954, Uncl.

ADAMSKI, E.

"We must save kilometers" p. 15 (Skrzydlate Polska, Vol. 9, no. 1, Jan 53, Warszawa)

SO: Monthly List of East European Accessions, Vol 2 No 9 Library of Congress Sept 53 Uncl

ALAMSKI, E.

"How to instruct candidates for honorary instructorships in the aeroclubs" p. 39
(Skrzydlate Polska, Vol. 9, no. 2, Feb 53, Warszawa)

SO: Monthly List of East European Accessions, Vol 2 No 9 Library of Congress Sept 53 Uncl

ADAMSKI, E.

Aeronautical studies at the Warsaw Polytechnic. 1. Subject of the studies.
(To be contd.) p. 222. (SKRZYDLATA POLSKA, Vol. 10, No. 14, Apr. 1954,
Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec.
1954, Uncl.

ADAMSKI, E.

The blind are flying. p. 228. (SKRZYDLATA POLSKA, Vol. 10, No. 15, Apr. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

ADAMSKI, E.

Aeronautical instruction conference in Wroclaw(Breslau) has not fulfilled all hopes. p. 261. (SKRZYDLATA POLSKA, Vol. 10, No. 17, Apr. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

ADAMSKI, Franciszek, mgr.

Part and place of psychology and sociology in the industry.
Przegl gorn 17 no.10:540-543.

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Family and profession. Wiad hut 19 no. 5: 136-138 Ky '63.

ADAMSKI, Franciszek, mgr

Studies on the tradition of the metallurgical worker's occupation. Hutnik P 31 no.1/2:50-54 Ja-F'64.

1. Silesian Institute, Katowice.

ADAMSKI, H.

Development of the cotton manufacturing industry in the period 1947-1957.
p. 287.

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Application of mixtures of aluminum and iron salts in water
coagulation. Gaz woda techn sanit 37 no.4/5:154-157 Ap-May '63.

1. City Enterprise of Water Supply and Sewerage, Szczecin.

ADAMS, J.

Reduction of length from the point of view of thermal expansion in land surveying.

1. 59 (ORIGINAL GLOMAYNE) Island, Vol. 13, No. 2, Feb. 1957

50: Monthly Index of European Accessions (AFII) Vol. 6, No. 11, November 1957

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Certain colloidal properties of McIntosh antigen and its significance in Bordet-Wassermann's reaction. Med.dosw.mikrob. 2 no.2:151-152 1950. (CLML 20:6)

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ADAMSKI, Jan; BARANCZAK, Zofia; DOBEK, Jacann; KRAJNIK, Joanna;
ZIOLKIEWICZ, Tadeusz

Conservative penicillin and streptomycin therapy based on bacteriological studies in cervicofacial actinomycosis. Gzasopismo stomat. 7 no.8:320-328 Aug 54.

1. Z Zakladu Chirurgii Stomatologicznej Akademii Medycznej w Poznaniu. Kierownik: prof. dr L.Lakner. Z Zakladu Mikrobiologii akademii Medycznej w Poznaniu. Kierownik: prof. dr J.Adamski.

(ACTINOMYCOSIS,
cervicofacial, ther., penicillin & streptomycin)
(FACE, diseases,
actinomycosis, ther., penicillin & streptomycin)
(PENICILLIN, therapeutic use,
actinomycosis, cervicofacial, with streptomycin)
(STREPTOMYCIN, therapeutic use,
actinomycosis, cervicofacial, with penicillin)
(NECK, diseases,
actinomycosis, ther., penicillin & streptomycin)

ADAMSKI, Jan; Prof.dr; DOBEK, Maria, Dr.

~~ADAMSKI, Jan; Prof.dr; DOBEK, Maria, Dr.~~
The sensitivity of strains of actinomyces Wolff-Israeli to some antibiotics in in-vitro tests. Bull.Soc.amis.ac.Poznan, Ser.C, no.5: 3-9 1955.

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(ACTINOMYCES, effect of drugs on,
antibiotics & other drugs)
(ANTIBIOTICS, effects,
on antinomyces)

ADAMSKI, Jan; DOBIEK, Maria; PAWLAK, Florain

Morphology and biology of Actinomyces. Med.dosw.mikrob. 7
no.4:377-383 1955.

1. Z Zakładu Mikrobiologii A. M. w Poznaniu. Kierownik: prof.
dr. Jan Adamski.

(ACTINOMYCES,
culture & microscopy)

ADAMSKI, Jan; BARANCZAK, Zofia; DOBEK, Maria; KRAJNIK, Joanna, ZIOLKIEWICZ, Tadeusz.

Conservative treatment of cervicofacial actinomycosis with para-aminosalicylic acid and isonicotinic acid hydrazid based on bacteriological findings. Czas, stomat. 8 no.2:61-67 Feb '55.

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(ACTINOMYCOSIS

cervicofacial, ther.isoniazid & PAS, indic.)

(NICOTINIC ACIDISOMERS, ther.use

isoniazid in cervicofacial actinomycosis)

(PARA-AMINOSALICYLIC ACID, ther.use

actinomycosis, cervicofacial)

(FACE, diseases

actinomycosis, cervicofacial, ther.isoniazid & PAS)

(NECK, diseases

actinomycosis, cervicofacial, ther.isoniazid & PAS)

ADAMSKI, Jan

~~Ref. to the original source of the information~~

Essay of cardiolipin and lecithin based on certain colloidal properties. Arch. immun. ter. dosw. 3:21-26 1955.

1. Zaklad Mikrobiologii Adademii Medycznej w Poznaniu
(Dyrektor: prof. dr. J. Adamski)

(CARDIOLIPIN,
colloidal properties (Pol))
(LECITHIN,
same)

ADAMSKI, JAN

KWASNIEWSKI, Stefan.; WITOSZYNSKI, Slawomir.; ADAMSKI, Jan.; DOBEK, Maria.

Studies on etiologic factor in rheumatoid arthritis and rheumatic fever. Polski tygod. lek. 12 no.29:1101-1107 15 July 57.

1. Z I Kliniki Chorob Wewnętrznych A. M. kierownik: prof. dr. Stefan Kwasniewski i z Zakładu Mikrobiologii A. M. w Poznaniu; kierownik: prof. dr. Jan Adamski. Adres: Poznan, ul, Długa 1/2. I Klin. Chor. Wewn. A.M.

(ARTHRITIS, RHEUMATOID, etiology and pathogenesis,
(Pol))

(RHEUMATIC FEVER, etiology and pathogenesis,
(Pol))

ADAMSKI, Jan; ROZWADOWSKA-DOWZENKOWA, Maria; WIZA, Jozef

Virus of infectious jaundice according to microbiological studies.
Poznan.tow.przyjaciol nauk, wydz.lek. 18 no.2/1:5-16 '59.
(HEPATITIS INFECTIOUS virol.)

POLAND

DOBROWOLSKA, H.; J. ADAMSKI, J. WIZA and F. MAZUR (all 3 of Poznan); Z. TAYTSCH (Of Warsaw); M. MORENYCKA (Gdansk), Z. PRZYBYLKIEMICZ and J. GEORGIADIS (Krakow); all of the Department of Virology (Zaklad Wirusologii) of the State Institute of Hygiene (Panstwowy Zaklad Higieny), Director: Prof Dr F. PRZESMYCKI.

"Investigations on the Duration of Humoral Immunity in a Population Immunized Against Poliomyelitis"

Warsaw, Przegląd Epidemiologiczny, Vol XVI, No 4, 1962, pp 405-413.

Abstract: /Authors' English summary modified/ Following the mass oral immunization against poliomyelitis in Poland the question arose of how long polio antibodies would persist in the immunized population. Serological studies have been carried out in 5 research centers. Blood samples were taken 3 times from the same persons: before immunization, 1 or

1/2

POLAND

ADAMSKI, Jan; WIZA, Josef and MAZUR, Benedykt: Wojewodztwo Health and Epidemiological Station (Wojewodzka Stacja Sanitarno-Epidemiologiczna) in Poznan, Director: Docent Dr S. GRZYMALA; and the Institute of Medical Microbiology (Zaklad Mikrobiologii Lekarskiej) of the AM [Akademia Medyczna -- Medical School] in Poznan, Director: Prof Dr J. WIZA.

"Serological Studies on Antibody Levels in Children Immunized Against Poliomyelitis in the City and Wojewodztwo of Poznan"

Warsaw, Przegląd Epidemiologiczny, Vol XVI, No 4, 1962
pp 415-421.

Abstract: [Authors' English summary modified] Serological studies on 435 children aged 6 months to 14 years immunized with Salk's inactivated vaccine and Koprowski's oral vaccine or with Koprowski's oral vaccine alone were performed. Serological studies made before immunization showed 23.4 percent of children triple negative and 29.8 triple positive. Postal 1/2

ADAMSKI, J.

39

POLAND

KULESZA, Aleksandra; Department of Epidemiology (Zaklad Epidemiologii), PZH (Panstwowy Zaklad Higieny -- State Institute of Hygiene), Director: Prof Dr J. KOSTRZEWSKI, Head of the Institute: Prof Dr E. PRZENIYCKI; with the collaboration of J. GOLEA, T. JOPKIEWICZ, M. KACPRZAK, W. KOCIELSKA, M. KOPEC, K. LIPINSKA, R. LUTYNSKI, J. MAKARENICZ, H. MALYSZKO, K. MEYMAN, A. OLES, S. PESKA, K. POPKIEWICZ, T. RODKIEWICZ, J. ROZWADOWNA, W. SOCZENICA, S. SZCZESNIAK, P. ZOZNIE-RZOWA all of the Wojewodztwo Health and Epidemiological Stations (Wojewodzkie Stacje Sanitarne-Epidemiologiczne); H. BOBROWSKI, A. GECOW, J. GELBER, M. GRUSZCZYNSKA, H. JASTRZESKA, E. JUZWA, J. KUROCZKIN, Z. RESZKE, R. STANCZYK, J. SYGNATOWICZOWA, Z. SZCZERSKA, K. SZCZYGIELSKI, S. SZYNDLAR, K. SWICOWA, J. WAJSZCZUK, R. WARZECHA all of the Departments of Poliomyelitis Patients (Oddzialy dla Chorych na Polio-myelitis) of the Wojewodztwo Health and Epidemiological Stations; J. ADAMSKI (Poznan), H. DOBROWOLSKA (Warsaw), J. BOCHENSKA (Lodz), M. KOENIG (Krakow); H. DOBROWOLSKA of the Department of Virology (Zaklad Wirusologii) of PZH,

1/2

POLAND

Director: Prof Dr F. PRZESMYCKI, technical aid: A. BACINSKA

"Epidemic Situation of Poliomyelitis in Poland in 1961"

Warsaw, Przegląd Epidemiologiczny, Vol XVI, No 4, 1962,
pp369-375.

Abstract: /Author's English summary modified/ The profound influence on the epidemiology, etiology and clinical picture of poliomyelitis of the introduction of mass immunization with attenuated polio vaccines in 1959 is discussed. Observations on the influence and effect of immunizations with such vaccines on the epidemic situation of poliomyelitis in Poland are reported. 4 tables, 2 diagrams; 5 Polish references.

12/2

ADAMSKI, J.

30

POLAND

EULESZA, Aleksandra of the Department of Epidemiology (Zaklad Epidemiologiczny) of the PZH (Panstwowy Zaklad Higieny -- State Institute of Hygiene), Director: Prof Dr F. PRZESMYCKI, Head of the Department: S. ROSTRZENSKI; J. GOLBA, T. JOPKIEWICZ, M. KACPRZAK, W. KOCIELSKA, K. LIPINSKI, R. LUTYNSKI, J. MARCINIOWICZ, S. PECKA, T. ROKNIEWICZ, W. SOGZEWICA, S. SZCZEPANIAK, D. ZOLNIERKOWA all of the WSEE (Wojskowe Stacje Sanitarne-Epidemiologiczne -- Military Health and Epidemiology Stations); H. BOBRONOWSKI, A. GECOW, J. GELBER, E. JUJWA, J. KUROCIKIN, J. SYGNATOWICZOWA, Z. SZCZERBA, K. SZCZYGIELSKI, K. SWICOWA, R. WARCZECHA of the Departments of Poliomyelitis Patients (Oddzialy dla Chorych na Poliomyelitis) of the WSEE; H. DOBROWOLSKA of the Department of Virology (Zaklad Wirusologii) of PZH, Director: Prof Dr F. PRZESMYCKI; J. ADAMSKI (Poznan), H. DOBROWOLSKA (Warsaw), J. BOCHENSKA (Lodz), K. KOENIG (Krakow), M. KOWER (Wroclaw), F.Z. TAYTSCH (Warsaw) of the PZH; technical aid of A. BACINSKA of the PZH.

"Safety of Immunization with the Attenuated Polio Virus ...

1/2

POLAND

Strains Type 1 Chat and Type 3 W Fox''

Warsaw, Przeegląd Epidemiologiczny, Vol XVI, No 4, 62, pp 377-383.

Abstract: [Author's English summary modified] An epidemical, clinical and virological analysis of poliomyelitis in Poland was made within 6 weeks after completion of oral immunization with polio virus type 1 Chat and type 3 W Fox. Investigations made in 1959 and 1960 show the complete safety of Koprowski's attenuated oral vaccine type 1 Chat. The strain 3 W Fox is indicated as a pathogenic one and its uncertain safety found by investigations in 1960 has been confirmed. 8 tables; 2 diagrams; 9 references, 2 Polish the rest West-ern.

[2/2

85441

P/046/60/005/004/001/007
A222/A026

21.5200
26.2244
AUTHORS: Mikke, Kazimierz; Adamski, Lesław; Józefowicz, Edward T.
TITLE: Scintillation Crystals of the ZnS (Ag) - Paraffin Type for Fast
Neutrons

PERIODICAL: Nukleonika, 1960, Vol. 5, No. 4, pp. 181 - 189

TEXT: The authors worked out a method of producing ZnS(Ag)-paraffin type scintillation crystals for fast neutron detection, they established optimum composition and thickness of the crystals and measured the rate of neutron detection and discrimination of gamma radiation. The article states that the so-called Hornyak button so far is the most efficient fast neutron detector. The Hornyak button contains silver-activated zinc sulphide, suspended in methyl polymetacrylate. Among other organic compounds paraffin was tested as a suspension medium. Recording of fast neutrons in such a system is possible due to recoil neutrons, knocked out from the organic material, which induce scintillation in zinc sulfide. At the same time, zinc sulfide has little sensitivity to gamma radiation. The use of paraffin as a medium containing hydrogen makes possible a fast and simple production of optionally dimensioned scintillation crystals. Silver-activated zinc

Card 1/4

85441

P/046/60/005/004/001/007
A222/A026

Scintillation Crystals of the ZnS (Ag) - Paraffin Type for Fast Neutrons

sulfide (Dr. Stamm - Nr. 211) was used as luminophore. The granules were of the size 2 - 15 μ . Scintillation crystals were made as follows: molten paraffin was mixed with an adequate quantity of zinc sulfide poured into a cylinder-shaped mold and pressed by means of a piston. To avoid precipitation of ZnS, the mold was subjected to vibration until the paraffin solidified. The crystals were then extruded by means of a threaded counterpiston; the product had a diameter of 40 mm and was up to 30 mm thick. A fluorescent mercury lamp shaded with a Wood filter was used to check the uniformity of ZnS distribution in paraffin. The crystals were tested by means of a Soviet LAS single-channel analyzer using a gamma scintillation head with a photomultiplier type ББУ-19 М. A layer of paraffin oil was introduced between the scintillation head and the crystal to ensure a good optical contact. In all tests a Po - Be neutron source with an output of 7.8×10^5 n/sec $\pm 10\%$ was used. Correction for Polonium decay ($T_{1/2} = 138.4$ days) was considered in the calculus. 64 μ C of Radium ($\pm 10\%$) constituted the source of gamma photons. In the end stage, a strong gamma source (108 mc of Radium) was used to test the gamma discrimination capability of the crystal. In the crystal-quality checks, integer curves were established of recorded neutrons and

Card 2/4

85441

P/046/60/005/004/001/007

A222/A026

Scintillation Crystals of the ZnS (Ag) - Paraffin Type for Fast Neutrons

photons in dependency on the discrimination voltage. Thanks to different curve slopes, the discrimination voltage may be adjusted so as to make the system efficiently record neutrons and practically cut off gamma photons. Photomultiplier voltage and amplification of the system were selected in such a way that the straight section of the neutron discrimination curve was located within the applied voltage range, and pulses originated by gamma photons were fully discriminated at about half that range. Preliminary tests were concerned with scintillation crystals containing 20, 30, 40, 50, 60 and 70% by weight of zinc sulfide respectively and showed maximum efficiency in crystals 3 - 4 mm thick at a 50 - 60% ZnS content. Final tests were focused on a 3.8 mm thick crystal containing 50% ZnS. In a heavy discrimination test, a gamma radiation source was used which irradiated the crystal with about 20 r/h. Under such conditions, the crystal recorded fast neutrons with an efficiency of 0.5% and practically did not respond to gamma radiation. Comparison of the ZnS-p crystal with the British-made scintillation crystal NE-450 (16 mm thick, 38 mm in diameter, made by "Nuclear Enterprises") and the Soviet crystal B (6mm thick, 40 mm in diameter), which is part of the neutron monitor RN-3, showed a neutron recording efficiency of 0.96% for the NE-450 crystal.

28
Card 3/4

35441

F/046/60/005/004/001/007

A222/A026

Scintillation Crystals of the ZnS (Ag) - Paraffin Type for Fast Neutrons

1.27% for the B crystal and 1.38% for the ZnS-p crystal, all at a neutron-to-gamma detection ratio of 1,000. Other properties of paraffin scintillation crystals are: mechanical strength lower than that of methyl polymetacrylate, worse surface polish, higher anisotropy of efficiency due to reduced thickness (3.8 instead of 6 or 16 mm), and simple production, which does not require high pressures or temperatures. There are 7 figures and 6 non-Soviet references. 4

ASSOCIATION: Instytut Badań Jądrowych, Warszawa, Zakład Inżynierii Reaktorowej
(Institute of Nuclear Research, Warsaw, Department of Reactor Engineering)

SUBMITTED: February, 1960

Card 4/4

ADAMSKI, Leslaw; BOUZYK, Jacek; JOZEFOWICZ, Krystyna

Determination of small quantities of sodium and potassium by the method of neutron activation. Nukleonika 5 no.6:317-327 '60.

1. Instytut Badan Jadrowych PAN, Warszawa, Zaklad Inzynierii Reaktorowej.

27155

P/046/60/005/010/004/009
D246/D302

~~241000~~
AUTHORS:

Józefowicz, Krystyna and Adamski, Lesław

TITLE:

Determination of impurities in the WWR-S reactor
cooling water using γ -spectroscopy

PERIODICAL:

Nukleonika, v. 5, no. 10, 1960, 617-628

TEXT: In order to enable an early detection of the failure of the fuel element or a change to be made in the corrosion rate during the operation of the WWR-S EWA reactor, it is necessary to follow the purity of the water used as coolant. Any impurities on being bombarded with neutrons will form β and γ emitting isotopes. The isotopes are identified by separating them into the major analytical groups followed by scintillation spectroscopy and are confirmed by determining the rate of decay for the individual γ lines, the age of the sample ranging from 8 sec. to 6 months. Only γ activity was considered; pure β emitters were disregarded. The following equipment was used in the experimental work: single channel amplitude analyzer, LAS-"Boksan" (for total activity); a hundred channel amplitude analyzer AI-100 "Raduga" (for spectro-
Card 1/6

Determination of impurities...

27155

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D246/D302

scopic analysis); a photo-multiplier FEU-29; a Hilger NAI(Tl) scintillation crystal. The γ -spectra were observed in three regions--0.05-1.8 MeV, 0.1-3.0 MeV and 0.3-8.0 MeV. After separation of the nuclides into analytical groups, each group had only a few active isotopes. The γ -spectra of the short-lived isotopes were marked by the strong ^{24}Na spectrum. To overcome this, a fast separation of Na from all the others had to be obtained. This was done by precipitating other metals with H_2S and OH^- , after the addition of carriers. Total γ -activity was measured by pumping the reactor water, thereby causing it to flow around the scintillating crystal at a constant rate. In this way, the age of the water sample in the vicinity of the crystal was kept constant (8 - 10 sec.). The decay of activity at time intervals of 10 sec. - 7 min. was also recorded. All radio isotopes thus detected are given in Table 2, where their corresponding γ -line energy, the most probable reaction producing them and the origin of the primary isotope are also quoted.

Card 2/6

Determination of impurities...

27155

P/046/60/005/010/004/009
D246/D302

Radionuclides identified in the reactor cooling water

Nuclide	$T_{1/2}$	Energy MeV	Reaction	Origin
^{16}N	7.35 s	6.13, 7.11	$^{16}\text{O} (n, p)$	water
^{19}O	27.0 s	0.20	$^{18}\text{O} (n, \gamma)$	water
^{28}Al	2.31 m	1.78	$^{27}\text{Al} (n, \gamma)$	aluminium
^{27}Mg	9.51 m	1.01	$^{26}\text{Mg} (n, \gamma)$	aluminium
^{65}Ni	2.56 h	1.49	$^{64}\text{Ni} (n, \gamma)$	steel
^{56}Mn	2.58 h	0.84, 1.81, 2.09	$^{55}\text{Mn} (n, \gamma)$	steel
^{64}Cu	12.8 h	0.51 (annih.)	$^{63}\text{Cu} (n, \gamma)$	aluminium and steel
^{24}Na	15.0 h	1.37, 2.75	$^{23}\text{Na} (n, \gamma)$	water
			$^{27}\text{Al} (n, \alpha)$	aluminium
^{51}Cr	27.8 d	0.32	$^{50}\text{Cr} (n, \gamma)$	steel
^{59}Fe	45.1 d	1.10, 1.29	$^{58}\text{Fe} (n, \gamma)$	steel
^{124}Sb	60.0 d	0.60, 0.72, 1.69, 2.10	$^{123}\text{Sb} (n, \gamma)$	brass, alloy
^{65}Zn	245 d	1.12	$^{64}\text{Zn} (n, \gamma)$	aluminium
^{54}Mn	291 d	0.84	$^{54}\text{Fe} (n, p)$	steel
^{60}Co	5.27 y	1.17, 1.33	$^{59}\text{Co} (n, \gamma)$	steel

Table 2

Card 3/6

27155

P/016/60/005/010/004/009
D246/D302

Determination of impurities...

After 10 sec. of decay the γ lines of ^{19}O and ^{16}N (both short lived) were very prominent, while after 5 min. lines due to ^{24}Na and ^{56}Mn were the most prominent, although those due to ^{64}Cu and ^{27}Mg became evident. Other isotopes (^{65}Ni , ^{59}Fe , ^{60}Co , ^{65}Zn) are only detected after chemical separation of Na. In the first 10 days, the total activity was found to be reduced by about 360 times (mainly due to ^{24}Na decay). To determine the amount of any of the isotopes, the mean neutron flux and the activation time must be known. These are not available in the case of water reactor coolant. Additional experiments conducted by the authors permit the specific activity of the three most active nuclides to be determined. Samples of MnSO_4 , Na_2CO_3 and ZnSO_4 were irradiated in a thermal column.

A simultaneous irradiation of tributyle phosphate and a determination of its specific activity, using a liquid scintillator developed by E. T. Jozefowicz (Ref. 7: Nukleonika (in preparation)), permits determination of the flux. Samples of irradiated Mn, Na and Zn were dissolved in water, and their γ -spectral line densities were compared with those obtained

Card 4/6

Determination of impurities...

27155

P/046/60/005/010/004/009
D246/D302

from the reactor coolant from which the specific activities of these three isotopes in the coolant could be calculated. The presence of individual isotopes in the reactor coolant, their concentration and activity are all time-dependent since some originate from the structural materials (corrosion by water), while concentration of others depends on whether the ion exchange filter is working or not. The specific activity due to

⁶⁵Zn was found to increase quickly if the ion-exchange filter was not working; a 6 hour working period reduces the ⁶⁵Zn activity by six times. Neither the fuel nuclides nor any fission products were found in the coolant. The authors express their thanks to K. Żarnowiecki for the preparation of samples, to J. Boużyk for his help in taking measurements and calculations, to E. T. Józefowicz for the neutron flux measurements and W. Suwalski for his assistance in instrumental problems. There are 11 figures, 2 tables and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: D. W. Moeller: Report ORNL 2311 (1957); R. L. Blanchard, G. W. Leddicotte, D. W. Moeller: Proc. Gen. Conf. 15/P/796 (1958).

Card 5/6

Determination of impurities...

27155

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D246/D302

ASSOCIATION: Institute of Nuclear Research, Warszawa, Reactor
Engineering Department

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SUBMITTED: July, 1960

Card 6/6

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P/046/61/006/005/002/002
D219/D304

AUTHORS: Adamski, Lesław, and Józefowicz, Krystyna

TITLE: Neutron activation of the reactor steel constituents.
Cobalt and manganese determination

PERIODICAL: Nukleonika, v. 6, no. 5, 1961, 325 - 334

TEXT: In this paper, the authors calculate the relative activities of components of a typical stainless steel after neutron irradiation in a reactor, for different irradiation and decay times, and a description of the determination of cobalt and manganese content of stainless steel samples by activation analysis is also given. The calculations are of importance in defining the optimum steel composition for reactor purposes, and the actual determinations enable the application of these calculations. The composition of stainless steel, for which calculations were made is typical (OH18 N9) based on Polish Standards PN-54/H-86020, and all data relating

Card 1/8

21386

Neutron activation of the ...

P/046/61/006/005/002/002
D219/D304

to the active isotopes is taken from the second edition of BNL-325
[Abstractor's note: No further qualification for this reference is
given]. Table 1 shows the results of the calculations. The exposure
times of 100 hours and 250 days correspond to one week and one year
periods of reactor operation respectively, and the decay times are
chosen to be representative of normal working conditions. Iron and
chromium are the basic, indispensable constituents of this steel
so that although chromium appears, after a decay of 24 hours or
more, to give the greatest contribution to the activity, it is
still valuable to limit the content of other activable elements
which do not have such strong effects on the properties of the
steel. The cobalt activity being the longest-lived and also fairly
high, may be the most serious under certain conditions. Manganese
constitutes the highest proportion of the steel activity during the
first hours after irradiation. There is, therefore, interest in
both these elements which have been determined by activation with
pile neutrons and γ -ray spectroscopy. In this, both the single-

Card 2/8

21386

Neutron activation of the ...

P/046/61/006/005/002/002
D219/D304

channel pulse height analyzer LAS "BOKSAN" and the hundred-channel analyzer AI-100 "RADUGA" were used. Due to the similarity between the γ -spectra of Co^{60} and Fe^{59} , the cobalt was separated chemically from the activated specimen, and examined on the assumption that any loss of Co^{60} was proportional to the cobalt content of the sample, and so would not affect relative results. The activity was measured using the hundred-channel analyzer in the region of the Co^{60} lines, and the single-channel analyzer integrally over 1.10 MeV, activity ratios being assumed proportional to cobalt mass ratios. This assumption was established to $\pm 5\%$ by a subsidiary experiment using mixtures of cobalt and iron sulphate. The results of the determinations are compared with those of two chemical analyses in Table 2. Sample 3 is taken as a standard for normalization purposes. The steel samples weighed 0.075 gr. and were irradiated in the WWR-S "EWA" reactor. The manganese content was measured more simply by a one minute irradiation of the steel sample in a flux of 10^{12} neutrons/cm²-sec, and the γ -activity in the region of the 0.84

Card 3/8

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21386

P/046/61/006/005/002/002
D219/D304

Neutron activation of the ...

MeV line was measured from 5 minutes to one hour after the irradiation. The proportionality between activity and manganese content was again demonstrated in a subsidiary experiment and Table 3 shows a comparison of the results with chemical analyses. Here sample 2 is taken as a standard for normalization. The authors conclude that activation analysis is the most convenient test for determining the manganese content of low manganese steels. The authors express their appreciation to Professor J. Minczewski for his interest. Steel samples were supplied by the Institute of Iron Metallurgy (Gliwice), where the chemical analysis was performed. There are 4 figures, 3 tables and 9 references: 2 Soviet-bloc and 7 non-Soviet-bloc. The references to the four most recent English-language publications read as follows: C.V. Mills, Iron and Steel 32, 149, 1959; T. Westermarck and I. Fineman, Proc.Gen.Conf. 15, p 140, 1958; P. Leveque, P. Martinelli, S. May, Intern.J. Applied Radiation and Isotopes, 4, 41, 1958; H.F. Beeghly, Problems in Nuclear Engineering (Ed. Hughes, D.J. and coll.) vol. I, p. 118, Pergamon Press, 1957.

Card 4/8

21386

Neutron activation of the ...

P/046/61/006/005/002/002
D219/D304

ASSOCIATION: Polish Academy of Sciences, Institute of Nuclear Research, Warsaw. Reactor Engineering Department

SUBMITTED: March, 1961

Table 1

Activation of Stainless Steel Components

Element	Content in steel per cent	Active isotope	Natural abundance per cent	Activation cross section barn	Period	Activity vs. exposure and decay time (t_e, t_d)				
						(100h, 0d)	(100h, 1d)	(250d, 0d)	(250d, 1d)	(250d, 30d)
Co	0.05	^{59}Co	100	$20 \pm 16 (^{60}\text{Co})$	5.28 y	4.6×10^{-3}	4.6×10^{-3}	2.6×10^{-3}	2.6×10^{-3}	2.6×10^{-3}
				16 (60 m Co)	10.4 m	1.4×10^{-1}	0	1.4×10^{-1}	0	0
Ta	0.1	^{181}Ta	100	19	111 d	2.7×10^{-4}	2.7×10^{-4}	8.2×10^{-3}	8.2×10^{-3}	6.8×10^{-3}
Mn	2.0	^{55}Mn	100	13.3	2.58 h	4.8×10^{-1}	9.6×10^{-4}	4.8×10^{-1}	9.6×10^{-4}	0
As	0.05	^{75}As	100	5.4	27 h	3.4×10^{-3}	1.8×10^{-3}	3.6×10^{-3}	1.9×10^{-3}	0

Card 5/8

21386

P/046/61/006/005/002/002
D219/D304

Neutron activation of the ...

Table 1.

Cu	0.2	⁶³ Cu	69.1	4.3	12.8 h	9.3×10^{-3}	2.6×10^{-3}	9.3×10^{-3}	2.6×10^{-3}	0
		⁶⁵ Cu	30.9	15.5	5.15 m	1.7×10^{-3}	0	1.7×10^{-3}	0	0
Nb	1.0	⁹³ Nb	100	1.0	6.6 m	1.1×10^{-1}	0	1.1×10^{-1}	0	0
Cr	18.5	⁵⁰ Cr	4.31	13.5	27.8 d	2.0×10^{-2}	2.0×10^{-2}	2.0×10^{-1}	2.0×10^{-1}	1.0×10^{-1}
Mo	2.0	⁹⁸ Mo	23.75	0.45	67 h	1.4×10^{-3}	1.1×10^{-3}	2.2×10^{-3}	1.7×10^{-3}	1.3×10^{-6}
Ni	9.5	⁶⁴ Ni	1.16	1.6	2.57 h	3.1×10^{-3}	6.2×10^{-6}	3.1×10^{-3}	6.2×10^{-6}	0
Ti	1.0	⁵⁰ Ti	5.34	0.14	5.8 m	1.6×10^{-4}	0	1.6×10^{-4}	0	0
Si	1.0	³⁰ Si	3.05	0.11	2.62 h	1.2×10^{-4}	2.4×10^{-7}	1.2×10^{-4}	2.4×10^{-7}	0
Fe	64.6	⁵⁸ Fe	0.31	0.98	46 d	2.1×10^{-4}	2.1×10^{-4}	3.5×10^{-3}	3.4×10^{-3}	2.2×10^{-3}

Card 6/8

Neutron activation of the ...

21386
P/046/61/006/005/002/002
D219/D304

Table 2.

Table 2

Cobalt contents determined in steels

Sample	Cobalt content (per cent)		
	chemical analysis		activation analysis
	I	II	
1	0.0103	0.011	0.011
2	0.0094	0.015	0.014
3	0.0314	0.03	0.031*)
4	—	0.087	0.12

*) "Standard sample" — value based on chemical results

Card 7/8

21386

Neutron activation of the ...

P/046/61/006/005/002/002
D219/D304

Table 3

Table 3.

Manganese contents determined in steels

Sample	Manganese content (per cent)		
	chemical analysis		activation analysis
	I	II	
1	0.47	0.40	0.45
2	0.55	0.56	0.55*)
3	1.24	0.81	1.27
4	0.73	0.19	0.19
5	0.30	—	0.28
6	0.70	—	0.72
7	0.47	—	0.49
8	0.59	—	0.58

Card 8/8

*) "Standard sample" — value based on chemical results

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cross-sections and resonance integrals of various reactor materials.

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